



PATENT

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Hsueh-Yuan Pao et al.

Attorney Docket No. : IL-11028

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Art Unit: 2611

Filed : August 19, 2003

Examiner: E. File

For : Digital Intermediate Frequency QAM  
Modulator Using Parallel ProcessingDECLARATION UNDER 37 CFR §1.132

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

I, Hsueh-Yuan Pao, hereby declare that I am a citizen of the United States of America and a resident of Livermore, California.

I have a PhD in 1995 from the University of Arizona.

I have worked in the field of electrical engineering at Lawrence Livermore National Laboratory for 8 years.

I have read the office action and would like the examiner to consider my comments concerning the inapplicability of the teachings of the McCullough reference to the Zhang reference.

McCullough's invention is a biphasic modulator as indicated in the title. There is no teaching of amplitude modulation in this reference. McCullough's teachings are only valid for phase-shift keying (PSK) applications, not Quadrature Amplitude Modulation (QAM), which is the subject of Zhang and is claimed in the present invention. McCullough's invention only varies phase, not amplitude. QAM requires modulation of amplitude. In QAM, the amplitude of two waves, 90 degrees out-of-phase with each other are modulated to represent the data signal. In phase-shift keying, the amplitude of the modulating signal is constant, and only the phase is varied. Contrary to the Examiner's assertion, McCullough does not teach a

modulator that can function in the QAM mode. Thus, one skilled in the art would not incorporate McCullough's modulation technique into Zhang's invention.

Accordingly, I respectfully request that the rejections be withdrawn.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Respectfully submitted,

  
Hsueh-Yuan Pao

Dated: September 15, 2006